

THE MEDICAL AND SURGICAL REPORTER.

No. 446.] PHILADELPHIA, SEPTEMBER 16, 1865. [Vol. XIII.—No. 12.

ORIGINAL DEPARTMENT.

Communications.

THE FOOD AND THE TEETH.

OBSERVATIONS ON THE INORGANIC CONSTITUENTS OF THE FOOD OF CHILDREN, AS CONNECTED WITH THE DECAY OF THE TEETH, AND THE PHYSICAL CONSTITUTION OF WOMEN IN AMERICA.

[The following very valuable and instructive paper was read before the District Medical Society for the County of Mercer, N. J., some years ago, by the late JAMES PAUL, M. D., of Trenton. There is so much in it worthy the consideration of the profession and the public, that we deem it of sufficient importance to reproduce it.—Ed. MED. AND SUR. REP.]

The subject to which I have the pleasure of directing your attention is, not only in a physiological point of view, one of interest, but in its application to the preservation of health—the tendency to improve the general condition and physical constitution of the human family inhabiting this great continent—a continent abounding, as it does, in all the productions which a bountiful Creator, in his beneficence, bestows on man—cannot be otherwise than of great and paramount importance.

At a period somewhat now remote, the celebrated naturalist, BUFFON, alluding to the animals of this continent, advanced the following opinions:

1st. That the animals common both to the Old and New Worlds are smaller in the latter.

2d. That those belonging to the New are on a smaller scale.

3d. That those which have been domesticated in both, have degenerated in America.

4th. That, on the whole, it exhibits fewer species.

These opinions, Mr. JEFFERSON, in his "Notes on Virginia," undertook, and it is generally considered successfully, to controvert; yet, however repugnant to the general idea the opinion as to the tendency of those animals which have been domesticated in America from other countries to

degenerate, it is an undeniable and much to be regretted fact, that the human family, and more particularly the female portion of that family, have declined in the vigor and strength of their physical constitution.

I wish not to be misunderstood: I say it is a melancholy fact, too well known to the observant physiologist, that increase of strength, and development of frame, have not been attained by the intermarrying of members of the human family of different nations on this continent; but the reverse is too observable: the physical frame of the female sex has degenerated—calling loudly for the aid of science to arrest an evil of so much magnitude.

Let us for a moment contemplate the female form, as seen on this broad continent. In no country in the world are children more fair and beautiful; and as the young girl grows up to womanhood, we see in her a full realization of that being forming in the hands of Divinity, portrayed by the poet, as seen by Adam in his dream:

"Under his forming hands, a creature grew,
Manlike, but different sex; so lovely fair,
That what seemed fair in all the world, seemed now
Mean, or in her summed up, in her contained,
And in her looks;"—

We see this young and lovely being—the forehead well developed—the countenance, rather elongated, relieved of the harsher outline of some of the European nations—with fragile form, and small, yet well-developed bust, flitting for a few short years among us, and then—yes, then there comes a change. Ere five and twenty summers pass, this flower begins to fade—the rounded form shrinks—the bloom of health decays; and if she escapes the fell destroying angel's death-like grasp, a wreck of former self remains.

Why should this be so? The robust of other countries come to this continent—they live in comfort—their food is excellent in quality—their progeny is like themselves—but even now, in the very first generation, does the degenerating process make itself manifest—the teeth begin to decay; and girls, while yet children, have to visit the dentist to have them cleansed, scraped, and plugged.

Now this brings us at once to the head and front of our subject; and if we can point out the

first cause of this decay of what should be as strong as adamant, it may be the means of helping us in our investigation. That there is something radically wrong in our system of rearing the young, to which this misfortune is in a great measure owing, I am free to confess, is my firm opinion. I would indeed it were in my power, in pointing out the evil, to be as successful in detailing the cause, that we may apply the remedy. Still, although perhaps unable to accomplish all I wish, my observations may not be without their weight, and induce others, more observant, more scientific, and more competent to the task, to follow up an investigation so fraught with advantage to our fellow-beings.

It is certainly to be deplored that the females of this continent, descendants of European parents, should be so much afflicted with caries of the teeth—the decay of parts formed of substances which enter into the composition of some of our hardest minerals—marble, bone-earth and fluor-spar; and this decay unfortunately occurs in early life—in girls yet at school; and many a young woman, ere she has attained a marriageable age, has had to replace the natural with the unnatural, though more enduring enamel of the artist's formation. This ought not to be: God made all mankind alike; in no portion of the earth are nations found who lose their hands, or feet, or tongue, or eyes; and there can be no cause why the inhabitants of this land should lose their teeth. It is not so in the olden countries from whence the progenitors of the present race have come; nor is it so in the West India Islands, which may almost be considered as part of this great continent. So excellent is the structure of the teeth of savage nations, that some tribes in Africa, I think the Mocoos and Mundingoes, file all the front teeth, so that they shall be separated and form sharp points, the better to tear the uncooked animal food.

One cause of this affliction is, in the mind of many, attributed to the great and sudden changes of temperature experienced on this continent—the thermometer rising and falling 20, 30, and even 40 degrees in twelve hours. But if attributable to these sudden changes, we know that sudden expansion by means of heat, or sudden contraction by means of cold, causes the particles of which bodies are composed to tear themselves asunder; consequently to crack, break, and fall in pieces. But this is not the case with the teeth of our females; a caries or decay commences most generally in the side of the tooth, extending to the enamel, which is sometimes involved in the destruction; at other times, it is left a crust or

shell to snap and break off in small pieces, when unable to resist the pressure of whatever may be placed against it; besides, the teeth are for the most part sheltered from these sudden changes, and kept at a temperature nearly amounting to blood-heat at all seasons. I do not think we can place the general destruction of the teeth, and consequent affliction of the females of America, to this cause. I fear we must rather look for it to constitutional weakness, and this constitutional weakness to a deficiency of the inorganic or earthy constituents being taken into the system, more particularly at an early period of life.

If I am correct in this opinion, and reason, philosophy, and a thorough examination of physiological facts in both the animal and vegetable economy, tend far to bear out these views, then if we would try and correct this lamentable state of things, let us commence at the very beginning, and make ourselves acquainted by examining the structure and composition of the teeth, and then we shall be more able to understand what is required to aid nature in their formation and consequent preservation.

First, then, let us make ourselves acquainted with the structure and composition of the teeth. The teeth are nearly allied to bone in structure; both having earthy deposits, intermixed with fibres and cells of gelatine, which, by consolidation, gives form and strength—in the case of bone, to bear the weight of the various parts, and afford protection to the different organs of the body; and in the case of teeth, to cut and grind the food required for the formation, support, and reparation of its various parts.

Now, teeth are composed of three different substances, and these three are disposed according to the purposes required of them; they are, *cementum* or *crusta petrosa*, *dentine* (known as ivory in the tusk of the elephant), and *enamel*. The *cementum* or *crusta petrosa*, corresponds in all especial particulars with bone; possessing its characteristic *lacune* or small cavities, and being traversed by vascular medullary canals, whenever it occurs of sufficient thickness; it is the first covering of the young teeth, and may be said to invest the fang of the tooth which enters the alveolar process of the jaw. The *dentine*, or *ivory*, consists of a firmer substance, in which inorganic or mineral matter predominates, though to a less degree than in *enamel*. It is traversed by a vast number of very fine cylindrical, branching, wavy tubuli, which commence at the pulpy cavity, and radiate toward the surface. The diameter of these tubuli, at their largest part, averages about one 10,000th of an inch: their smallest are im-

measurably fine; so much so, that they cannot possibly receive blood, but it is surmised that, like the canaliculi of bone, they imbibe fluid from the vascular lining of the pulp-cavity, which aids in the nutrition of the tooth. The *enamel* is composed of solid prisms of fibres, about the one 5,600th of an inch in diameter, arranged side by side, and closely adherent to each other; their length corresponds with the thickness of the layer which they form; and the two surfaces of this layer present the ends of the prism, which are usually more or less hexagonal. In the perfect state, the enamel contains but an extremely minute quantity of animal matter. In the centre of the tooth is the soft pulpy cavity, which affords a bed for the blood-vessels and nerves which supply it with life and sensibility.

I shall not enter more minutely into the structure of the teeth, but may briefly state, that like all other structures of the animal body, the component parts are derived and deposited from the blood, by that mysterious and incomprehensible power that selects and deposits the necessary constituents in the formation of the several portions, according to the use required.

Now, in the composition of the teeth, we have first the division into organic and inorganic or earthy matter; and we find that the several substances which enter into the structure of the teeth, differ chiefly as to the earthy matter contained in each.

Chemical analysis of the incisors, or front teeth of man, show that they contain in one hundred parts of each, as follows:

	Cementum.	Dentine.	Enamel.
Organic Matter.....	29.27	28.70	3.59
Earthy Matter.....	70.73	71.30	96.41
	100.	100.	100.

These proportions will occasionally differ; in some individuals the organic constituents having less than here stated, amounting in the dentine only to 21. The analysis of bone, however, gives a much larger proportion, viz.

Organic Matter	32.56
Earthy Matter.....	67.44
	100.

Let us now take a more complete analysis, showing what earthy constituents enter into their composition. Analysis of the molar or grinding teeth of man, and of the bones of the arm and leg of a man of forty, show the following proportions:

	Dentine.	Enamel.	Bone.
Inorganic Matter:—			
Phosphate of Lime, with traces of Fluide of Lime.....	66.72	89.82	54.61
Carbonate of Lime.....	2.56	4.57	9.41
Phosphate of Magnesia.....	1.06	1.34	1.07
Salts, etc.....	.83	.58	2.25
Organic Matter.....	28.01	3.59	32.56
	100.	100.	100.

Thus we see the very great proportion of certain earths that enter into the structure of the teeth and bone of man, the chief substance being the phosphate of lime, familiarly known as bone-earth. We find, too, that whereas in ordinary bone the phosphate of lime constitutes only 54 parts in 100, in the enamel of the teeth it is nearly 90 parts in 100—while the carbonate of lime in bone amounts to 9.41, in the enamel of teeth it is only 4.57; the enamel being literally almost a mineral in substance, having only 3.59 parts of animal matter in 100.

Thus the teeth to be strong and durable, require a large quantity of earthy ingredients, particularly *lime*, to enter into their composition. Let us inquire whence it is derived; and for this we must examine the blood.

To allow of such deposits from the blood, it is first necessary that they should be held in solution in that fluid. You are no doubt aware that the blood circulates to every portion of the body by the action of the heart, which forces a certain quantity, say 2 oz. at every contraction, into the aorta or great canal leading from the left ventricle—that the aorta divides and subdivides into innumerable branches, which are made to ramify to every part of the body, until the extreme branches end in capillary tubes or vessels, the calibre of which is so small as not to allow the red globules or corpuscles of the blood to enter them, but which allows the serous portion to traverse every part of the organized structure, holding in solution all those constituents necessary and requisite for the formation and reparation of its several parts.

In the serous portion of the blood, then, we find contained the constituents required for the composition of bone and teeth—analysis of 1000 parts of healthy human blood giving, according to M. LECANU, the following proportions:

Water.....	780 15	785.55
Fibrine.....	2.10	3.57
Albumen.....	65.09	69.41
Coloring matter.....	133.00	119.63
Crystallizable fat.....	2.45	4.30
Fluid fat.....	1.51	2.37
Extractive matter, uncertain.....	1.79	1.92
Albumen in combination with Soda.....	1.25	2.01
Chlorides of Sodium and Potassium; Carbonates, Phosphates and Sulphates of Potash and Soda.....	8.57	7.30
Carbonates of Lime and Magnesia; Phosphates of Lime, Magnesia and Iron; Peroxide of Iron.....	2.10	1.45
Loss.....	2.40	2.50
	1000.	1000.

We see by this table, if we subtract or take away the proportion of water amounting to 780 parts, and the coloring matter amounting to 133, we shall leave scarcely 90 parts of organic and earthy material, the salts and earths forming

upwards of a 10th—the salts being in proportion to the earths as 4 to 1.

Having then shown the constituent portions of the bones and teeth to be in the blood, the next consideration is, whence are they derived?

Before entering on this subject further, let us for a moment take a broader and more comprehensive view of what must be most interesting to mothers, and of great consequence to the well-being of the infant generation, in a short time, in a very few years, to become in their turn the mothers and fathers of another generation.

The question then presents itself, what is the nourishment or food best adapted and necessary to the wants of an infant, that the foundation may be laid for a strong frame and vigorous constitution? For here, we must recollect, is the starting point in by far the majority of instances. We know that in some cases disease is hereditary—that the offspring unfortunately inherits from the parents constitutional defects; but we also know that more misery, suffering, and constitutional derangement, are entailed on children by want of care, and improper food in the first years of life, by which their hopes of health are blasted, and they are doomed to struggle through a weary life, to be hurried at last into a premature grave.

Now, that the frame—that is, the bones, muscles and other portions of the infant—may be fully developed, it is necessary that it should be supplied with nourishment, containing all the constituents required for this important undertaking. And this nourishment, by the all-wise ordering of Providence, is contained in the milk secreted from the mother's bosom.

The infant is entirely dependent on the nourishment derived from its mother, and nature has wisely ordained that the secretion from the mother is its very best food; for we find in the composition of milk—that is, healthy milk, derived from healthy blood—all those ingredients we have hitherto traced as requisite in the formation of the bones and teeth, and not only these, but every constituent required for the life and growth of the individual;—milk containing the albuminous, saccharine, oleaginous, saline, and earthy compounds requisite and necessary for the health, strength, and development of the infant child.

How thankful ought we to be to the all-wise and bountiful Giver of all good, for this beneficent, this wonderful provision in nature, by which there shall be secreted from the mother, a fluid so important, having properties blended in intimate connection, to afford the requisite substances

for the support, growth and development of her offspring.

An analysis of cow's milk gives the following proportions of the various constituents; that of human milk is not so elaborate, but contains the average of observations taken at fourteen different times from the same individual, by SIMON.

Cow's milk by M. HAIDLEN.

Water.....	873.00
Butter.....	50.00
Caseine.....	48.20
Milk Sugar.....	43.20
Phosphate of Lime.....	2.31
Phosphate of Magnesia.....	.42
Phosphate of Iron.....	.07
Chloride of Potassium.....	1.44
Chloride of Sodium.....	.34
Soda in connection with Caseine.....	.42
	10.0.

Woman's milk by SIMON.

Water.....	883.6
Butter.....	25.3
Caseine.....	34.3
Milk Sugar and Extractive Matter.....	48.2
Fixed Salts.....	2.3
	1000.

	Maximum of 14 observations.	Minimum of 14 observations.
Butter.....	54.0	8.0
Caseine.....	45.3	10.6
Sugar and Extractive Matter.....	52.4	39.2
Salts.....	2.7	1.6

Now although these amounts will no doubt vary, under every variety of circumstances, according to the *health, exercise, passions, and food* of the mother, yet they show what I particularly wish to impress on your minds, that healthy milk contains all the requisites for the nourishment of the infant—but then it must be *healthy* milk, secreted from healthy blood, and that blood must derive these ingredients from the *food* consumed, otherwise they will be taken up from the structures of the body, and hence the havoc made in nursing females when a due allowance of proper aliment is withheld, and the shrunken body of the famished mother is drained to the last drop, to supply the cravings of the death-like and impoverished offspring.

I have said that the composition of milk in quality and quantity, will vary and depend on circumstances. Now the mental state exerts a surprising influence on this secretion, and much more than is usually supposed. It may not be irrelevant to mention a few of the cases recorded in our journals,* of the influence of strong mental excitement on this secretion.

"A carpenter fell into a quarrel with a soldier billeted in his house, and was set upon by the latter with his drawn sword. The wife of the carpenter, at first, trembled from fear and terror, and then suddenly threw herself furiously be-

* From Carpenter's Physiology.

tween the combatants, wrested the sword from the soldier's hand, broke it in pieces, and threw it away. During the tumult, some neighbors came in and separated the men. While in this state of strong excitement, the mother took up her child from the cradle, where it lay playing, and in the most perfect health, never having had a moment's illness; she gave it the breast, and in so doing, sealed its fate. In a few minutes the infant left off sucking, became restless, panted, and sank dead upon its mother's bosom. The physician, who was instantly called in, found the child lying in the cradle, as if asleep, and with its features undisturbed; but all his resources were fruitless. It was irrevocably gone."

"A lady having several children, of which none had manifested any particular tendency to cerebral disease, and of which the youngest was a healthy infant a few months old, heard of the death of the infant child of a friend residing at a distance, with whom she had been on terms of close intimacy, and whose family had increased coterminously with her own. The circumstance naturally made a strong impression on her mind, and she dwelt upon it the more, perhaps, as she happened at that period to be separated from the rest of her family, and to be much alone with her babe. One morning shortly after having nursed it, she laid it in its cradle, asleep and apparently in perfect health; her attention was shortly attracted to it by a noise, and on going to the cradle, she found her infant in a convulsion, which lasted for a few minutes, and left it dead."

"A mother had lost several children in early infancy from a convulsive disorder. One infant, however, survived the usual fatal period; but whilst nursing him one morning, she had been strongly dwelling on the fear of losing him also, although he appeared a very healthy child. In a few minutes after the infant had been transferred into the arms of the nurse, and while she was urging her mistress to take a more cheerful view, directing her attention to his thriving appearance, he was seized with a convulsion-fit, and died almost instantly."

These are interesting cases, and tend to show the great influence the mental affections exert on the secretion of milk, in rendering it deleterious in quality, and unwholesome to the infant.

[To be continued.]

"Stimulants do not create nervous power," says ERGATES, in one of Sir B. BRODIE'S admirable conversations, "they merely enable you, as it were, to use of that which is left, and then induce necessity for sleep."

BENZOLE GAS.

DOES BENZOLE, OR BENZINE GAS, EVOLVED DURING THE PROCESS OF REFINING PETROLEUM, OR CRUDE CARBON OIL, ACT AS AN ACRID OR CORROSIVE POISON, WHEN ABSORBED INTO THE SYSTEM?

[An intelligent correspondent in the "Oil region" of this State, furnishes the following communication, which, we trust, will induce others to give the profession the benefit of their observations in this connection.—ED. MED. & SURG. REP.]

Within the last few months, during the hot summer weather, my attention has frequently been called to the above question. I will quote from my note-book several cases among many that came within my range of observation, and will hope to receive some replies from the profession.

CASE 1. June 30th, 1865. Was called at night to see Mrs. M., aged about 30 years, who had that day been brought from Oil City, after an illness of four weeks. Had been living in close proximity to a refinery. Found extreme nervous prostration, constant retching and eructations of wind, occasional vomiting of a greenish yellow matter, violent purging of watery, yellowish stools, tongue deeply red, and pain in epigastric and hypogastric regions. Much restlessness and anxiety. Not much headache. Had been in this condition nearly all the time. Had been some better several times. Prescribed lime-water and milk, mucilaginous and demulcent drinks, morphine acetate, hydrocyanic acid, counter-irritation, and enema of starch, tinc. opii., and plumbi acetate. Improvement gradual, but decided.

CASE 2. June 30th, 1865. Was called to see Miss W., age 18 years, who had been brought home from Oil City by her parents. Had been living with a married sister, in the vicinity of a refinery. Had been sick seven or eight days at Oil City, before they brought her home. Found tongue deeply red with papillary elevations, great irritability of stomach, constant eructations and retching, with occasional vomiting of a yellowish matter, mixed with mucus. Severe headache, high fever, and the conjunctiva injected. Thirst and restlessness. The alvine evacuations were frequent—stools thin, watery, and of a yellowish color, with great pain in the hypogastric region, and some pain in epigastrium. Treatment same as mentioned in the above case. Recovered rapidly for a while, but being exposed, through want of attention, the windows having been left open at night by the attendant, and during a storm, she had an attack of pneumonia, from which she has since recovered.

CASE 3. July 12th, 1865. Was called to see

Miss T., age sixteen years. Had been working at Oil City, at the millinery trade. Was brought home by her friends on account of her illness. Was taken sick with purging and vomiting about two weeks ago. Has, at present, pain in hypogastric region and in epigastrium, high fever, headache, restlessness, conjunctiva considerably injected, pulse 120. Tongue deeply red, with some papillary elevations. Much sickness at stomach, and constant retching, eructations, with occasional vomiting of greenish yellow mucus. Alvine evacuations frequent, and stools thin, watery, and yellowish. Has much thirst. Has also congestion of lower lobule of left lung. Treatment same as followed in similar cases, and modified to suit indications with respect to pneumonia. She recovered rapidly, and in three weeks was able to be at her work again.

I might cite many similar cases, but the above I deem sufficient for the attainment of my object. I desire to elicit the opinions of my professional confrères upon this matter, and, if possible, to induce those who have the means at hand, to demonstrate and settle this question by chemical analysis. I live about fifty miles from Oil City, and hence, in my practice, see only those cases who, by the promise of high wages, have been tempted to that place to labor. In a few weeks, or months at best, they return home sick, or, if too ill to come themselves, are brought home by their friends. The cases I have detailed are among the severest, and by inquiry, I find that the worst cases invariably have been laboring, or living, perhaps both, in the vicinity of refineries, where this gas exists in the largest quantities. When brought home, they express an aversion for everything that has the smell of carbon oil, requesting the lamps containing it to be taken out of the room. I have learned also, that some of the laborers in these refineries are frequently taken with purging, vomiting, and cramps, so severe that death follows in a short time. At Oil City, they have called it *cholera*, and so great was the alarm at one time, that people in the country were afraid to visit the place.

Benzine gas is known to be very inflammable, highly volatile, and to permeate almost all substances. I have, however, not yet seen it placed among the list of acrid or corrosive poisons. Again, the sanitary condition of the place is very much neglected. The streets, or street of Oil City is narrow, muddy the year round, and all manner of filth, offal, and garbage is allowed to collect there, ferment, and fill the air with its sickening effluvia. To this, the charge of sickness is laid by many, and, no doubt, it is potent.

But does this mud, garbage, etc., generate an acrid poison, or must we trace it to a different source?

The question to me seems to be one of great importance, and to those living and laboring at that place, it must be more important still; for, during the hot months, sickness is rife, and the mortality large. Every one who goes there is troubled with diarrhoea, even though they stay but a short time. Many cases might be cited for that, but for cases as severe as many are, I can see but one cause, and that cause an *acid-corrosive poison*, be it generated by decaying filth and garbage, or be it *benzine gas*, inhaled, absorbed, eaten in the food, and drank in the water, it is, nevertheless, a *poison*, and a poison peculiar to the place.

"STUDENT."

SUCCESSFUL AMPUTATION AT THE HIP JOINT.

By E. BATWELL, M. D.,

Of Detroit, Mich.; Late Surgeon-in-Chief 2d Div., 14 Army Corps.

WILLIAM SIMPSON, aged 24 years, a member of an Iowa regiment, engaged as a courier, was admitted to the hospital under the following circumstances:

Whilst in the act of mounting his horse, he was struck by a minnie ball in the left leg; on examination it was found that the injury received not alone comminuted the bone and lacerated the soft parts, so as to preclude the possibility of a successful termination even under the most favorable circumstances if left to nature, but that some of the branches of the profunda were involved, calling for prompt action, as the bleeding was very profuse. Amputation was decided on, and the patient having been placed under the influence of chloroform it was performed by anterior and posterior flaps. The knife was made to enter about an inch below the trochanter major, and passed obliquely across, about three inches lower at its point of exit than at its entrance. The limb was quickly removed, and the blood vessels secured. The upper fragment of bone was seized and the saw *applied to the neck*, thus leaving the head of the femur in the acetabulum. This was done with the view of exposing as little surface as possible, and also for the sake of expedition, as the shortness of the fragment would have made it a tedious and difficult task to remove it from the socket. The ball had entered about an inch below and internal to the great trochanter, completely shattering the bone through the extent of four or five inches and coming out midway posteriorly. Beef tea, milk punch and fresh beef were given freely, together with a

preparation of iron, and everything likely to sustain nature in the vast work of reparation. Not a single unfavorable symptom occurred during the process of healing, and in two months the patient was sent to the rear. Since, he has been discharged from the service, and is employed as a travelling book agent, in the enjoyment of perfect health, his wound giving him no trouble.

A case very similar to the above, was operated on in a like manner after the battle of Jonesboro, Ga., Sept. 1st 1864, except that the bone was entirely removed, but the patient died in about twelve hours. The notes of this case are very meagre and unsatisfactory.

EDITORIAL DEPARTMENT.

Periscope.

The Application of Sutures to Bone in recent Gunshot Fractures, with cases; also, Remarks on their Similar Use in some other Fractures and Operations.

At a recent meeting of the Royal Medical and Chirurgical Society, Dr. BENJAMIN HOWARD, late Ass't Surgeon, U. S. Army, read a paper with the above title. From the *Dublin Med. Journal*, we learn that the author exhibited statistics showing the large number of secondary amputations which are rendered necessary in gunshot fractures of the extremities by the inevitable transportation from the battle-field to general hospital. The disastrous results in these cases are mainly due to the constant motion of the fractured ends of the bones, between which innumerable loose fragments and sharp spiculae of bone are ground together, mangling the soft parts adjacent, and producing violent irritation and inflammation, which is still further increased by the pressure and constriction of disarranged bandages and splints firmly applied on starting, to prevent displacement—an attempt perfectly hopeless without the use of other means. The most careful efforts of this kind are frequently followed by such inflammation during the "middle passage" as to destroy every hope of saving either the limb or life of the patient.

Resection of the shaft of the long bones has been practised, with removal of the loose fragments, but the motion remains undiminished, and the ends of the bones are continually apart. In 1863, the author, in a communication to the Surgeon-General of the U. S. Army, proposed a plan of treatment for gunshot fractures of the humerus, which he had since carried out, with a view to obviate the evils referred to, wherever the operation might be practicable. The treatment consists in cutting down upon the seat of fracture, enlarging the wound or otherwise, removing all fragments of bone and everything which can act as a foreign body, making a clean section of the fractured ends transversely, or at such parallel obliquities as to secure the most

perfect apposition with the least shortening. The ends are then firmly secured together by two wire sutures, the edges of the wound approximated, and a light splint applied by a simple retentive bandage, so as to leave the wound freely exposed for the repeated application of cold water from the canteen of the patient.

The chief points in the operation are to carefully avoid any unnecessary degree of disturbance of the soft parts, and especially of the periosteum; to introduce the two sutures as described, through only one cortical portion of each end, and each as nearly as possible in the same line of diameter of the bone, to prevent any hinge-like motion. The sutures, which are of annealed iron, or better, perhaps, of plated copper wire, may be cut off short, or be left protruding through the wound, so that, by successive tightening twists, nature may be aided in her natural process of extrusion.

The advantages claimed for this plan of treatment consist:

1st. Negatively. In the absence of all previous causes of irritation.

2d. Positively. In securing complete coaptation and perfect rest.

A case of gunshot fracture of the humerus was related, in which all the details of this plan were carried out. Although the patient was afterward left uncared for on the field, and submitted to extraordinary exposure, the limb was in excellent condition, and, as far as could be ascertained, it continued so until subsequent recovery, and transfer of the man to another regiment.

Another case also was reported of severe fracture from lodgment of a fragment of shell in the femur, with great shortening. After removal of the missile and fragments of bone, the fracture was reduced, and without section of the bone, by means of one stout wire suture. The refitted, interlocked fragments were permanently secured *in situ*. The patient, who was sixty years of age, and of feeble constitution, was removed to have died a few days afterward, *en route* to general hospital. This plan of treatment not only contemplates disposal of the chief sources of immediate danger, but of those causing great ultimate delay, thus averting the innumerable intercurrent diseases incidental thereto. It is new only in its application. Substantially the same operation, including the use of the wire suture, has for a long period been practised, and still meets with general approval, as a secondary operation for ununited fracture. Other things being equal, it cannot be less admissible as a primary operation, where, in the absence of all pathological changes, we have a healthy condition of all the parts, with sound bone in apposition and at rest.

Although it would be unwise to anticipate too definitely the histories of the author's cases, which may be hereafter collected from the various hospitals to which they were sent, and from which a more complete report will be made, his experience so far justifies him in submitting the plan of treatment to the profession. He would recommend the use of wire sutures in the manner described, in certain compound fractures with great displacement, in Pirogov's operation, if prac-

tised, and in fractures of the jaw, in which he had used them with great advantage.

A fellow asked the author if he had met with any cases in which the upper and lower extremities had been treated.

Dr. HOWARD replied that the plan was introduced for the treatment of fracture of the humerus, and had been adopted in but one case of fracture of the femur. Dr. HOWARD then exhibited several diagrams illustrating the chief points in his paper.

Dr. FRANCIS MASON asked if the process was not a difficult one? He had seen Mr. FERGUSON do the operation twice, and each time with considerable difficulty.

Dr. HOWARD said it was difficult without assistance. He had, however, once done it in five minutes; but, as a rule, the operation required twenty or thirty minutes.

The Practical Value of the Thermometer in the Diagnosis and Prognosis of Acute Diseases.

Dr. JOHN S. WARNER recently read a paper on the above subject before the South Eastern Branch of the *Brit. Med. Ass.*, where he gave his experience in typhus and typhoid fevers, acute rheumatism, erysipelas and pyæmia, as to the value of the instrument as an agent in prognosis. The following are his general conclusions as taken from the *British Med. Journal*:

1. That, in ordinary cases, the pulse and temperature rising together synchronously, the use of the thermometer is in such circumstances superfluous, and therefore objectionable, as taking up time.

2. That, when the pulse and general symptoms on one hand indicate danger, the temperature on the other hand not raising alarm from being either very high or very low, the pulse and general symptoms are by far the most trustworthy in forming a correct prognosis.

3. That, in cases in which the general symptoms are perplexing, one counterbalancing the other, a very high temperature registered by the thermometer throws one more weight in the scale for forming an unfavorable opinion, and *vice versa*.

4. That, if the pulse and general symptoms of a patient are favorable, the thermometer, in spite of this, marking a high temperature, the former symptoms are to be chiefly relied on in forming a prognosis, though the latter should make us still more careful in searching for any fresh complication that may have arisen.

5. That, should the general symptoms be improved, and the thermometer also be going down, the latter observation confirms conclusively the other favorable symptoms.

He then passed to the question of the value of the thermometer in diagnosis, where he considers it of great value in doubtful cases; indeed he endorses the following quotation of Dr. AITKEN from his *Practice of Physic*:

The regularity of the typical thermometrical variations in the course of febrile affections is so

constant and so much to be depended on, that the differential diagnosis of such diseases as ephemeral, intermittent, typhus, and scarlet fever, small-pox, measles, acute rheumatism, erysipelas, pneumonia, pyæmia, may be established by observation of the temperature.

He illustrates this part of the subject in a very striking manner, by narrating several cases where he has actually decided the diagnosis by the use of the clinical thermometer. In conclusion Dr. WARNER concludes as follows:

"That, in cases of doubtful diagnosis, the clinical thermometer is of great value; as it indicates at once the existence of fever, and in many cases actually the variety of fever under which the patient labors."

Separation of the Humerus at its Epiphysis; the shaft driven through the Deltoid Muscle.

In its September number the *Lancet* relates a case of separation of the humerus at its epiphysis, with severe complication, which occurred at the Norfolk and Norwich hospital, under the care of Dr CHARLES WILLIAMS.

A farm-boy aged 19, was thrown from a horse, falling with great force on his right elbow. On the outer aspect of his right shoulder was a transverse wound, through which protruded one inch of the shaft of the humerus. It had been driven upward through the deltoid muscle, much above the level of the head of the bone. Its superior surface was rough and corresponded with the inferior surface of the epiphysal cartilaga. The humerus could not be returned within the wound and placed under the epiphysis, until the prominent portion of the bone had been removed with a fine saw.

A year after the injury the wound had not closed, the probe indicating the presence of necrosed bone. Another year and the wound remained still unhealed. But the necrosed pieces of bone finally worked out, and after the lapse of another eighteen months he was discharged well, with perfect shape of shoulder, and complete ability to move his arm in any direction and follow his occupation.

The case shows what nature will sometimes accomplish, when left to her own resources. L.

The Poison of Mushrooms.

The *American Journal of Pharmacy* quotes from the memoir of MM. SICARD and SCHORAS (*Journal de Pharm.*) the following conclusions regarding the poison of mushrooms:

- 1st. That the poisonous principle that exists in many species of mushrooms ought to be regarded as an alkaloid as it unites with acids and forms salts.

- 2d. This salt obtained by the process described in their paper, is extremely poisonous. The employment of an indefinitely small quantity in the author's experience, was always mortal to frogs. A small quantity also was sufficient to kill a dog; and it is remarkable that the effects exercised upon the animal organism by this substance are the same as those observed in latter times from *Cyrania*. L.

Syphilitic Disease of the Bones in Infants.

At a meeting of the Hospital Medical Society in Paris, M. FOURNIER, says the *Gazette Méd. de Lyons*, related the cases of two children in whom he had met with syphilitic disease of the bones. The first case was that of a child three months ago, born apparently healthy. Two months after birth, an eruption appeared on the buttocks, thighs, and groin; and there was also abundant coryza. When M. FOURNIER saw the child the following appearances were noticed. There was a papular syphilide, rather confluent, on the buttocks and thighs, and a similar eruption, but confluent, near the anus; several of the papules, especially near the anus, were ulcerated. There were also mucous patches on the lips and scrotum; and an abundant discharge from the nose of sanious pus, not mixed with blood. The child had also considerable swelling of the right arm, near the elbow-joint; the tissues there felt pasty, but the color of the skin was not changed. On examination, a tumor of the size of a large almond, adherent to the bone, and immovable, was found at the inner edge of the lowest part of the humerus. The swelling had appeared during the third month; and, as it enlarged, the child lost the power of bending the forearm, and the hand became paralyzed. The patient was otherwise apparently in good condition. Iodide of potassium and other remedies were employed; the swelling diminished, but the eruption remained obstinate. Ultimately, the child was sent into the country, and M. FOURNIER lost sight of it. In the second case, says our exchange, (*Brit. Med. Jour.*) an infant aged three months, the child of syphilitic parents, presented no trace of the disease when born. In six or seven weeks, however, ulcerated papules appeared on the buttocks, arms, and scrotum, accompanied by a purulent nasal discharge and various eruptions on the skin. M. FOURNIER found a pustular syphilide on the face, occupying chiefly the forehead and nostrils; a purulent discharge, streaked with blood, from the nose; numerous copper-colored traces of papules most recently cicatrized, on the buttocks, scrotum, and arms, and some papules which had not ulcerated; also a considerable pasty swelling, without change of color, at the upper part of the forearm. On palpation, there was found to be an enlargement of the two bones at their upper part. The ulna appeared to have doubled its size, and the radius was much enlarged. The humerus was healthy. The child was pale, and somewhat thin, but did not present the general traits of infantile syphilis, nor any carberia. Iodide of potassium was given for a month, with the effect of producing marked improvement. After this time, M. FOURNIER did not see the child again; but some time afterward heard that it died after a sudden attack of vomiting and diarrhoea.

Trichinae.

VIRCHOW, in his *Essay on Trichinae*, says, that the most careful cooking is required to destroy the trichinae in fresh meat; that salt has a very destructive effect on the parasites; and that ten days of salting will effectually destroy them.

Hams, sausages, etc., should not be eaten fresh; but should be kept a long time before being used.

Case of Malposition of Abdominal Viscera.

Dr. JAS. B. RUTTAN, A. A. Surgeon U. S. A., Gallipolis, O., records in the *Cincinnati Lancet and Observer* a case of malposition of the abdominal viscera. The subject was a soldier, ROB. ARMSTRONG, 1st N. Y. V. Cav. who died from chronic diarrhoea.

The autopsy revealed the following state of things:

Lungs normal in color and size. Heart situated on right side of the sternum. The liver occupied the left hypochondriac region, right lobe being smaller than the left, in the same ratio that the left is smaller than the right in the normal subject. Its inferior border strongly adhered to the transverse colon.

Stomach situated in right hypochondriac region, the great end occupying the extreme right, the small running from right to left, was strongly attached to the transverse colon, so firmly adhered that they formed a solid mass.

The spleen was also situated on the right side, having the same relations to the organs of that side as when situated on the left, its lower end was adherent to the right kidney.

The caput coli occupied the left iliac fossa, ascending on the left side, crossing from left to right, descending on the right side.

The intestines showed the usual appearances of chronic diarrhoea, ulceration, etc. L.

Hypodermic Injection of Calomel in Syphilis.

Dr. SCARENZIO of Pavia has published the results of his treatment of constitutional syphilis by means of the subcutaneous injection of calomel suspended in a convenient vehicle (such as glycerine, mucilage, or water.) Says the *Brit. Med. Journal* he employed calomel in the persuasion that it could, in absorption, become changed into bichloride of mercury; and the reason for not using the last named salt at once was, that he feared it would produce gangrenous inflammation. The injection used consisted of twenty centigrammes (about three grains) of sublimed calomel, mixed with a gramme and a half or two grammes (from 23 to 30 grains) of liquid. It was used like other hypodermic injections. Dr. SCARENZIO at first chose the inner side of the thigh as the part for making the injection; but afterward the inner aspect of the arm, as this does not oblige the patient to remain long in bed. In eight cases of ulcer, nodes, pains in the bones, blennorrhoea, tubercle, necrosis, etc., the treatment failed once only; the case being one which obstinately resisted all mercurial treatment. The cure was rapid and permanent, and not accompanied nor followed by any accidents. There is however, always an abscess at the point of puncture, which, however, on being opened, heals rapidly. The pus contains no trace of mercury. Dr. SCARENZIO believes that the abscesses are due to the transformation of the calomel into bichloride of mercury. The good effects of the injection do not appear for a week or two; but when improvement once sets in, recovery proceeds rapidly. In one case there was rather obstinate salivation.

MEDICAL AND SURGICAL REPORTER.

PHILADELPHIA, SEPTEMBER 16, 1865.

THE CHOLERA.

The medical profession is well aware that Asiatic cholera has long been naturalized as a disease of occasional occurrence in almost all parts of the world. It is in its epidemic form only that it gives cause for alarm. Originating in India, and first attracting special notice during the fearful epidemic which began in 1817, it gradually advanced westwardly, until it entered Russia in 1830, thence across Europe to England, where it first appeared in 1831, and raged with violence during the following year, crossing the Atlantic in the spring of 1832, and spreading with great fatality over this country.

Since that time, we have had three epidemics of the disease, viz., in 1849, 1854, and 1858, the disease each time starting on its fearful course of destruction out of India, as did the original epidemic which spent itself in Europe and this country, in 1831-2. Again, in 1862-3, the cholera demon aroused itself from its lair in India, and started forth on another errand of destruction. During those years, it proved very fatal in different portions of India. In 1864, it did not seem to attract attention at all, but, for some months past, Europe has been thrown into great excitement, and some portions into real consternation, in consequence of being threatened with epidemic diseases of a very fatal character. First, in the latter part of last year, and early part of this, came the "Russian or Siberian Plague," as it was termed, a disease of a typhus nature, attended with considerable fatality, which advanced half-way across Europe, where it has seemed to pause in its progress for a time.

Meanwhile, another evil influence, reported to be our old enemy, the Asiatic cholera, made its appearance, early in this year, in Arabia, being first reported to us as raging with fearful violence among the pilgrims to Mecca. From thence it advanced northward to the Mediterranean, and followed both its northern shore into Turkey, and its southern shore into Egypt. This is a different track from any ever followed before by cholera in its westward progress, and it seems by its erratic course to sorely puzzle the alarmists of western Europe, which is apparently menaced now by two epidemics—the "Russian Plague" from the northeast, and the cholera from the southeast. We have chronicled the doings of the epidemic in Alexandria and Cairo in Egypt.

From Egypt, the cholera has crossed the Mediterranean, appearing at various ports of southern Europe, as Port Mahon, Barcelona and Valencia in Spain, Marseilles in France, and at Ancona in Italy. It is also advancing westwardly by Smyrna and Constantinople. In some of these places it has been very fatal. Our minister at Constantinople advises our government that the ravages of the cholera at the Turkish capital might have been greatly checked had a rigid quarantine been enforced. The fact has already been published that the deaths in Constantinople, at last accounts, reached over 500 a day. A newspaper correspondent, writing on the 2d of August, says the disease has all the worst types of Asiatic cholera, and rages, though the weather is cool and pleasant. Few Europeans have been attacked. The government physicians, although paid extremely high salaries, have mostly fled.

This epidemic seems to have carried a panic with it wherever it has appeared, and the populace is reported to fly before it in every direction. A late report says:—The accounts of the ravages of cholera in the East are becoming dreadful. The deaths seem to have spread a panic even among Mussulmans, with whom it is a point of honor to meet epidemics resignedly. From the correspondence of the *Times*, we learn that in Constantinople, up to the 11th ult., 150,000 workmen had fled the city, and in the crowded quarters the people died in hundreds unattended and uncared for. In Smyrna, the disease is aggravated by poverty so dreadful that the British Consul is feeding 250 people out of his own pocket, simply to keep them alive. The Jewish community in Smyrna, including about 10,000 persons, is suffering in an extraordinary degree from cholera and poverty. During the cholera panic at Barcelona, nearly 10,000 people left the town in one day, although very few cases of real cholera occurred there.

By the last arrival, as we write this, it is reported that no advance of the disease has been made—that it is, indeed, receding, and the inhabitants of western Europe are flattering themselves that they may escape these epidemics, that have been threatening them, altogether.

In this connection, we will present extracts from some remarks of Dr. HEADLAM GREENOUGH, recently made before a meeting in London of medical officers of health, members of the Epidemiological Society, clergy, and others interested in the sanitary condition of the metropolis and of the kingdom generally. They express better than we can, the sentiments of the medical

profession on the proper way of meeting the advance of this disease. Dr. GREENOUGH says:

An outbreak of cholera has taken place in Asia. It has broken through close quarantines and has appeared with great severity at Malta. It has also appeared with great severity at Ancona, in Italy. It has broken out in Spain, and at Marseilles. Cholera is reported to be prevalent in Hanover. Diarrhoea has been excessive in the metropolis. Extraordinary epidemic visitations on cattle are common precursors of epidemic visitations on the human species—and a severe epidemic in cattle has appeared in England.

The extraordinary epidemic of cholera in 1832 slew thirty-two thousand persons, and that of 1848-49 slew seventy-two thousand persons in Great Britain. The recorded evidence of medical officers in every part of the country proved that where measures founded on careful observations of the previous course of the epidemic visitation of 1832 were duly taken in time, the attacks were greatly diminished in number, in intensity, and in fatality. Well-managed public establishments, comprising the lowest classes of the population, presented examples of almost entire immunity from attack, while the most dire slaughter was upon people in places under removable conditions, in respect to which timely, clear, and express warnings had been given to guardians and other local authorities charged with them.

The attacks were as forewarned; the most severe on the like places and people in the like conditions as those who now suffer from the foul-air diseases, from typhus, from dysentery, from diarrhoea, and from the eruptive diseases of the symptomatic or fermenting class; which diseases are almost entirely unknown amongst the lowest inmates of well-conditioned public establishments, of well-conditioned orphan asylums, refuges for the destitute, or amongst the inmates of well-constructed and well-managed union houses and prisons; which diseases are comparatively few and slight in improved common lodging houses or in model dwellings, and are rare in the houses of the well-to-do classes, but are never absent among the wage classes living in crowded ill-drained courts and alleys, ill supplied with pure water, and ill-cleansed, close, filthy, ill-ventilated, and foul-aired, and which slay nearly 100,000 per annum of men, women, and children, in Great Britain alone.

In this preventible slaughter is included a considerable proportion of the lower middle classes, shopkeepers, who are kept in-doors in foul air from cess-pools, from house drains of deposit, and from sewers of deposit, the prevention of which—by the abolition of cesspools, and the substitution of house self-cleaning tubular drains and sewers, in the city of Salisbury, in Croydon, and in other places—has occasioned a reduction of all ordinary death-rates by one-third, and has there consequently occasioned a like reduction of the exposure to extraordinary epidemic visitations. For it is established by the observation of previous extraordinary epidemics, and it was expressly forewarned and fulfilled that the visitation of extraordinary epidemics are in the ratio of the ordinary death-rates upon the different classes of the

community, and these are governed by the foul air disease.

Now, the anticipation of the track of the extraordinary visitation on the classes of persons, and on places as denoted by the classes occupying them, was closely verified in the epidemic visitation of 1848-49, by the results, as displayed in the evidence subsequently collected as to the course taken by that visitation, with exceptions corresponding with the conditions of the people; the visitation being, in some instances, less severe on laborers chiefly engaged in out-door occupations and most severe on small shopkeepers confined in ill-conditioned shops and houses.

The instances of the most efficient voluntary efforts during the last epidemic were by organized house-to-house visitation, and before the epidemic, to ascertain the condition of places and of persons, to advise, forewarn, and urge measures of prevention for voluntary adoption, and to direct and apply aid where needed; for cleansing premises; measures of ventilation, the reduction of overcrowding, and, during the epidemic, to ascertain the existence of premonitory symptoms, and to direct immediate medical aid.

Practically public notifications are not universally read or attended to, even by those who can read and whom they most concern, but the severest attacks are on persons of neglected education, in the densest ignorance, for the greater proportion of whom cannot read, and who can only be warned and moved for the preservation of their wives and children, or themselves, by direct personal and verbal communication and influence; as by the clergy and missionary or other visitors.

It is to be observed, however, that although the visitations of the cholera epidemic are on the like places, and mostly on the same places, yet that some of the like places, that are so scourged on one visitation, escape at another, but that none of the like places can reckon on the converse. But all common fever nests, all places visited by the ordinary epidemics, now need extraordinary examinations and exertions for amendment, and will be benefitted by them, as already stated, whether visited by the impending epidemic or not.

The influence of better knowledge and skill may be relied upon for improved exertion as against the impending outbreak, and the committee have received gratifying reports of the preparations already making in several instances. But it would be literally a fatal error if the experience of the shortcomings of a large proportion of the local authorities on the last extraordinary visitation were overlooked, and if they were not to be guarded against by volunteer arrangements. The slaughter was aggravated on the last visitation by want of sufficient information or understanding of the extraordinary preventive services or works required; by neglect or delay of applying them, until the epidemic was full on the population, and when they were too late, and when the extraordinary epidemic had passed, being relieved from the pressure of public attention, little or nothing was done for the protection of the

people against the continued evil influences in the generation of ordinary epidemic disease.

The committee recommend, under these circumstances, that a public meeting should be called, to which the annexed resolutions may be submitted:

The primary preventive measures suggested by previous experience are—a house-to-house examination of the houses, and the courts, alleys, streets, or habitations, from whence foul air diseases do now arise. For which purposes, lists should be got out, from the local registrars, of the houses that have been of late visited by diseases of the zymotic class. Also, lists from the relieving officers, and the medical officers of unions, of the houses and places most frequently visited by such diseases.

Experience has shown that ill-ventilated school-rooms, overcrowded with children filthy in person, and dirty in dress, are great sources of epidemic diseases amongst children. On an examination, an excessive annual mortality of eight and nine thousand children annually within the school ages in the metropolis, and of nearly fifty thousand children in the United Kingdom, was due chiefly to epidemic diseases which bad school conditions promote. These sources of additional danger from the extraordinary epidemics would require anxious attention.

The effects of the bad condition of the ill-ventilated workshops have been repeatedly shown to the surprise of the public, by the rise in health of the wage classes, as those of the cotton operatives during the period of cotton famine, when the factories were closed; and the workers were in the open air. These sources of pre-disposition to extraordinary epidemics should be visited, and amendments suggested for the protection of the workers.

Such house-to-house visitations and examinations of the chief sources of ordinary foul air diseases would suggest reasons, and give the facts to the visitors for instructions and directions to the people, as to what must be done by themselves, and would furnish grounds for representations as to what must be done by others, and what may be needed from the authorities having charge of the Diseases Prevention Act, as well as of the provisions provided for the protection of the public health. Such examinations cannot be too early or too extensively instituted, whether the extraordinary epidemic advance upon the people of this country or not. The permanent defences against it, now obviously weak, cannot be too soon seen to and made good. As against a possible though more remotely probable military invasion by a foreign enemy, the Government of the country has been called upon to expend several millions of money annually, and to provide new works and elaborately organized forces, volunteer as well as regular, although the most ruthless invaders in modern times could scarcely be expected to inflict such a slaughter as was inflicted by the cholera invasion of 1848-49 upon upwards of 70,000, chiefly defenceless poor people—men, women, and unoffending children. It appears that the present is a befitting opportunity in which it would be culpable to forego claims upon public attention to the state of the existing

defences against internal and cruel pestilences which regularly ravage the people, as well as against the extraordinary invasion of pestilence, which past experience shows may be expected with certainty at recurring periods, unless the proved results of sanitary science be properly consulted and generally and completely applied.

A WILL CASE.

In one of the courts of the city of New York a case is on trial in which the testator bequeathed his property, by will, to his survivors, his wife, her daughter, and an older daughter of his first wife. The latter was his favorite, and to her he bequeathed the bulk of his property, which amounted to about two hundred and fifty thousand dollars, giving his wife nothing but her right of dower, and his youngest daughter only five hundred dollars. About three years ago, the older daughter executed a will, according to her own inclinations, devising and bequeathing her property—which had increased greatly in value—before competent witnesses, now living. About a year ago, she showed symptoms of insanity, and was removed to an institution for the insane, where she died last spring. A short time before her decease, the testatrix tore her will to pieces. Her husband took out letters of administration, on the ground that there was no valid will extant. The witnesses to the destroyed will, however, arraigned him before the court, when he admitted that such a will was made, but that deceased had destroyed it, though the pieces into which it was torn, were preserved. On being produced in court, the pieces, when pasted together, were found to constitute a perfect document. The legatees of the will are the contestants in the case. They contend that a will is not destroyed, if the remnants remain so as to be discernible when put together, and also, that a will cannot be destroyed by a person of unsound mind.

The case comes up soon for trial. The probability is—as there are first-rate pickings for lawyers—that it will take a long time to settle the law on this subject; the case, in the meantime, going from court to court, the lawyers the while adjusting it by vigorous bites from the cheese. Without any disposition to “interfere with the course of justice,” (the grab-game of the lawyers?) we have no hesitancy in deciding in favor of the contestants. The will seems to have been made while testatrix was sane, and torn to pieces, though not destroyed, while she was insane, and therefore irresponsible for her acts. The will is valid, and should be sustained.

Dr. HENRY FAYRE, the editor of *La France Médicale*, has proceeded at his own expense to

Alexandria, to watch the progress and nature of the epidemic cholera now prevalent in that city.

News and Miscellany.

Ancient Table Luxuries.

GALIGNANI says the excavations at Pompeii have just brought to light a house which no doubt belonged to some millionaire of the time, as the furniture is of ivory, bronze, and marble. The couches of the triclinium, or dining-room, are especially of extreme richness. The flooring consists of an immense mosaic, well preserved in parts, and of which the centre represents a table laid out for a grand dinner. In the middle, on a large dish, may be seen a splendid peacock, with its tail spread out, and placed back to back with another bird also of elegant plumage. Around them are arranged lobsters, one of which holds a blue egg in its claws; a second, an oyster, which appears to be fricasseed, as it is open and covered with herbs; a third, a rat, *farci*, and a fourth, a small vase filled with fried grasshoppers. Next comes a circle of dishes of fish, interspersed with others of partridges, hares, and squirrels, which all have their heads placed between their fore-feet. Then comes a row of sausages of all forms, supported by one of eggs, oysters, and olives, which, in its turn, is surrounded by a double circle of peaches, cherries, melons, and other fruits and vegetables.

The walls of the triclinium are covered with fresco paintings of birds, fruits, flowers, game, and fish of all kinds, the whole interspersed with drawings, which lend a charm to the whole not easy to describe. On a table of rare wood, carved, and inlaid with gold, marble, agate, and lapis lazuli, were found amphora, still containing wine, and some goblets of onyx.

Remedies for Cholera.

Dr. JOHN CHAPMAN, of London, who seems to be using his "spinal ice-bag" for the cure of nearly all the ills to which flesh is heir, holds that "the primary cause of cholera is, as a general rule, the excessive heat of hot climates, and of temperate climates in summer when cholera prevails;" that "the proximate cause of cholera is of precisely the same nature as that of summer or choleraic diarrhoea, but that it is far more developed, and consequently that its action is proportionately more powerful and intense;" that "cholera is neither contagious nor infectious in any sense whatsoever, except through the depressing influence of fear;" and "that cholera may be completely averted, and, when developed, cured,

by the persistent application of the spinal ice-bag along the whole spine so long as any symptoms of the disease continue."

Under the name of "Rev. Dr. HAMLIN'S mixture" a remedy is in extensive use in Constantinople, composed of equal parts by weight, of laudanum, spirits of camphor and tincture of rhubarb.

New St. Thomas's Hospital.

The governors of St. Thomas's Hospital have had under their consideration the designs prepared by Mr. HENRY CURREY for the new hospital proposed to be erected on the south bank of the Thames, and which are set forth in twenty-two drawings, including one very large and very good perspective view, showing the aspect the building, or rather pile of buildings, will present from the river, along which it will extend 1200 feet. It comes close up to Westminster Bridge, on the right hand side (when going toward Astley's), and shows toward the river seven separate blocks, four stories high above ground, connected by corridors and service buildings, the pavilion principle being, of course, adopted. The pavilions are placed at a distance of 125 feet from each other, the centre court being increased to 200 feet, which distance will admit of ample sunlight and air to every block. The wards are designed to be 28 feet in width by 120 feet in length, and 15 feet in height, and will accommodate twenty-eight beds, giving a cubic capacity for each patient of 1800 feet. The beds are placed at distances of 8 feet from centre to centre; and the windows are arranged alternately with the beds at a level, to enable the patients to look out of them. The number of beds will be 588. The water-closets, lavatories, and bath-rooms, attached to each ward, are projected from the main building, and are cut off from the ward by intercepting lobbies, with windows on both sides. The water-closets and lavatories have also windows on all four sides, to provide for thorough ventilation, with a view to prevent the escape of any noxious effluvia into the ward. The chapel is placed in the centre of the building, communicating with the corridor of one-pair story, with convenient access for both sexes, and is designed to give three hundred sittings. The museums, school-buildings, lecture-theatres, etc., are proposed to be placed at the southern end of the ground, as indicated on the plans; but the detailed arrangements of this department are not completely matured. The building is designed to have fire-proof floors throughout, formed with wrought and rolled iron joists, and concrete. The windows go up to the ceilings of the wards. The floors will be of oak; and the wall surfaces finished with Keene's or Parian cement. The terrace toward the river is proposed to be kept four feet above the public footway. This, with the height of a parapet, three feet six inches, will prevent any overlooking by the public. The style adopted may be called, broadly, Italian. Mr. CURREY'S approximate estimate, the walls being of brick with stone dressings, is £330,000. If the whole building be faced with stone, the cost would be about £30,000 more.

The estimate includes a bed of concrete, ten feet thick, under the whole surface, and some idea is given of the size of the area covered when it is mentioned that for every additional yard in depth of concrete the extra expenditure will be £4000. —*Builder.*

The influence of Electricity on the color of Insects, etc.

The color of the various pigments which are the cause of the spots we see on the skins of animals has hitherto been ascribed to the effects of the temperature of ambient air, or to an afflux of blood occasioned by the physiological action of certain organs situated near the teguments. In a paper addressed to the Paris Academy by Dr. NICHOLAS WAGNER, the author examines the question anew, with a view to ascertain whether such a cause can be admitted in the case of inferior animals, or whether it ought not rather to be attributed to the influence of electricity. The insect-world appearing to him the best calculated to solve the question, first, because of the immense variety of pigments it displays, and secondly, because of the greater simplicity of their organization, their circulatory system being quite rudimentary, Dr. WAGNER selected for his experiments a kind of diurnal butterfly (*Vanessa urticae*), numbers of which he had easily at command. The apparatus he used was a small Ruhmkorff's machine for intermittent induction currents; for his experiments with constant currents he used two or three Grove's elements. He thus ascertained that strong currents disorganize, first the pigment, then the scales; and then the membrane itself which constitutes the wing, producing in it holes of different sizes. Weaker currents will change the color of the pigments, transforming red into orange, and black into red, thus destroying the black spots which exist on the wings of the Vanessa. The weakest currents, on the contrary, give rise to black spots; that is, they favor the formation of the black pigment, but always near the places where the natural spots exist. Sometimes slight changes were effected in the shape of the existing spots, and it was in such cases ascertained that the change of form followed the direction of the current. If a current of moderate force be directed along the outer margin of the wings, the natural sinuities of the latter are destroyed. Hence, our author is of opinion that in these experiments electricity acts as an irritating agent; and from a second series of experiments he arrives at the conclusion that there exists fixed currents of electricity in the wings themselves of these insects. The strongest of these currents flows from the base of the wing to the outer margin, following the middle nervure; and other currents starting from the same point cross each other. Dr. WAGNER is continuing his experiments on this subject.

Myriad Zoophytes.

In one species found on the Irish coast, and with cells upon one side only, Dr. GRANT calculates there are more than eighteen cells in a square line, or 1800 in a square inch of surface, and the branches of an ordinary specimen pre-

sent about ten square inches of surface, so that a common specimen of *Flustra carbasea* presents more than 18,000 polypi, 396,000 tentacula, and 39,600,000 cilia. —*Hardwicke's Science Gossip.*

Pension Examining Surgeons.

The Commissioner of Pensions has appointed the following as examining surgeons for pensions. *Pennsylvania.*—Dr. GEO. R. LEWIS, Indiana. *West Virginia.*—Dr. L. C. BRYAN, Clark burgh. *Connecticut.*—Dr. DANIEL BOSTWICK, Litchfield. *Wisconsin.*—Dr. MARION WATERHOUSE, Portage.

Bite of Venomous Reptiles.

In a paper addressed to the French Academy of Sciences, Dr. GUYON combats the popular idea that the poison of reptiles is more virulent in summer than in winter, and asserts that the activity is in proportion to the time in which the virus is accumulating. In winter, therefore, and whenever the animal is in a state of torpidity or partially suspended animation, the virus becomes more concentrated, as he appears to have proved by experiments with vipers and scorpions. Dr. GUYON defines the symptoms which follow the infliction of a bite or sting by such reptiles—first, a violent pain at the moment of injury; then an unconquerable itching at the spot; then, trembling, vomiting, difficulty of breathing, often accompanied with a cough, dilatation of the pupils, muscular contractions, tetanic symptoms, etc.

Contagious Diseases among Cattle.

An order has been issued by the authority of the Privy Council, "whereas a contagious or infectious disorder, of which the nature is at present uncertain, has lately appeared, and now prevails among cattle, within the metropolis and in the neighborhood thereof, and it is expedient to take measures for preventing such disorder from spreading," it is ordered by the Privy Council that notice shall be given of the existence of any cattle laboring under infectious disorder, within the city of London, in the limits of the metropolitan police district, "to the Clerk of her Majesty's Most Honorable Privy Council, in waiting at the office of her Majesty's Privy Council at Whitehall; and it shall be lawful for the said clerk of her Majesty's Privy Council, and for all such persons as he shall by writing under his hand authorize in that behalf, thereupon, and at all reasonable times thereafter, to inspect and examine all or any such diseased animals or animal, and to report to the Lords of her Majesty's Privy Council all such information and particulars as to the nature or character of such disorder as may seem to him expedient for the purpose of enabling proper regulations to be made for preventing or checking the further propagation and increase of such disorder. Every person offending against this order, and omitting to give such notice or to permit such inspection and examination as aforesaid, shall for every such offence forfeit any sum not exceeding £20, which the justices before whom he or she shall be tried, may think fit to impose."

Speculations Concerning Meteorites.

In a paper published by M. HAIDINGER, the eminent astronomer, we find some curious calculations concerning meteorites. Admitting that the weight of these bodies falling annually upon the earth is four hundred and fifty thousand pounds, or four hundred and fifty million pounds in one thousand years, M. REICHENBACH has started the question whether, in the course of centuries, our globe might not undergo such modifications in weight as materially to affect its connection with the solar system. But as our earth weighs about thirteen and one-half quadrillions of pounds, the formation of a meteoric agglomeration equal to our planet would require about three thousand trillions of years; hence, any change like that contemplated by M. REICHENBACH, would occur in a space of time far beyond the power of the imagination to conceive.

But M. HAIDINGER turns his attention to another question, asking whether, if our globe in the course of one solar revolution receives an increase of matter equal to four hundred and fifty thousand pounds, this increase might not have been similar in weight in describing any orbit of equal length? It has been proved that meteoric falls are less frequent at the time of perihelion than at the time of aphelion; but it must also be remembered that the sun itself moves with considerable velocity through the stellar space. Taking these data therefore into account, M. HAIDINGER calculates that the weight of meteoric matter existing and moving about in every direction within the space limited by the earth's and sun's motions during one year, is equal to four hundred and fifty thousand pounds multiplied by one billion two hundred and eighteen thousand four hundred and sixty millions, or about half a trillion of pounds. The weight of the earth is to four hundred and fifty thousand pounds of meteorites as twenty-four millions are to unity; but a far greater proportion of solid matter distributed into small bodies would be obtained, were the great number of shooting-stars and fire-balls taken into account, which appear in our atmosphere, and many of which do not apparently deposit solid matter. It is estimated that not less than ten millions of meteors of this description enter our atmosphere every day. These stones, it is believed, leave the extra-terrestrial space as solids, their velocity being greater on entering the earth's atmosphere; they are retarded by the resistance of the air; the fire-ball is formed by the compression of the air behind them, and the rotation of the stones resulting therefrom; the termination of the first part of the path is marked by a detonation caused by the collapse of the vacuum from the air rushing in with great violence.

Treatment of Stings.

M. DE MORTILLET has published in the *Sud-Est*, a Grenoble paper, a curious remedy for the sting of a dangerous insect. It is the application of the wax of the ear to the injured part. This simple remedy, he positively asserts, will cure the deadly sting of a poisonous fly, which would otherwise produce carbuncle. Whatever may be

the efficacy of this treatment, there can be no harm in trying it, the substance being always at hand. Should it not succeed, the patient will always be in time to have recourse to a more radical treatment.

Discussions upon Aphasia.

The love which our French medical academicians have for learned and eloquent and deep discussions of what we may call impossible questions, has been well exemplified in the late long debates on aphasia, in the Academy of Medicine. Bouillaud, Trousseau, Parchappe, Baillarger, Cérise, Bonnafont, and other speakers, have recorded their eloquence on this topic before an admiring and applauding audience. But what is the result? To us who sit outside, and hear not the charming facility of speech, and correctness and closeness in arguing, of those who so often are there heard, it almost seems as if the *jeu ne valoit pas la chandelle*. The very disease aphasia is to most of us a new one; and we venture to say that even yet no one can give a satisfactory definition of TROUSSEAU's new term. The whole discussion shows that it is impossible to admit the existence of aphasia, pure and simple, apart from other disturbance of the intelligence or motion; and that it is much more reasonable to regard the loss, partial or complete, of speech, as a phenomenon coincident with cerebral hemorrhage, softening of the brain, general paralysis, different forms of insanity, wounds of the encephalon, and all the various diseases of which the brain is the seat. Aphasia has been observed as a symptom of many diseases, but never as a morbid entity. This is what the clinical history of the disease showed. As regards its morbid anatomy, BOUILLAUD and PARCHAPPE cited cases which, in their opinion, seemed to localize the power of speech in the anterior lobes of the brain; but this was only a very partial view of the case. M. CÉRISE touched upon the psychological side of the question, and put some questions very puzzling to those who would localize speech in one particular part of the brain. He pointed out the relation between the thoughts and the power of speech. Thought is the internal voice; speech, the external. But what know we of the seat of thought in the brain? And, if we cannot localize the internal voice, how can we pretend to localize its external expression?—*Brit. Med. Journal*.

Mr. CARLOS MARSTON, a physician, and his daughter, a girl of ten, were shot dead by his wife at South Dedham, Mass., on Thursday August 31st. Mrs. MARSTON was probably laboring under temporary mental derangement.

Talc as an Application to Burns and Wounds.

Dr. GUYON, of Paris, speaks in very high terms of the value of talc (silicate of alumina and magnesia) as an application to burns and suppurating wounds. It is very clean and soft; resists fermentation, and therefore opposes vegetation; is inoffensive; causes no pain; rapidly cleans the wound; and produces healthy granulations. It is also an excellent hæmostatic.

Death from Alleged Fright.

A drunken fellow at Manchester is said to have died of fright, believing he had caught hydrophobia from a dog, which had bitten him.

MARRIED.

BISHOP—WILLIAMS.—On Tuesday morning, August 29th, 1865, at the bride's residence, by the Rev. Thomas Chesnut, Dr. L. W. Bishop, of Mt. Washington, Hamilton co., and Miss Louisa Williams, daughter of John Williams, Esq., of Williamsburg, Clermont county, Ohio.

GRAHAM—MATTHEWS.—August 17th, by Rev. S. C. Jennings, D. D., Dr. Thomas P. Graham, and Miss Mary Louisa Matthews, all of Allegheny co., Pa.

GROVER—FLINT.—In Northampton, Mass., Cuvier Grover, Brevet Major General U. S. A., and Susie Willard, daughter of Prof. Austin Flint, M. D., of New York city.

HAYWARD—NORTH.—At Zion church, New York city, on Thursday, August 24th, by Rev. Dr. Harold, Lieutenant G. W. Hayward, U. S. N., and Miss Susan, daughter of Dr. R. L. North, of Charleston, S. C.

OWEN—ROE.—At Westport, N. Y., on Thursday, August 31st, by Rev. Dr. Owen, Edward J. Owen, Esq., of New York, and Alice, daughter of the late Dr. G. M. Roe, of Monroe, Orange county, N. Y.

PARSONS—DARLINGTON.—On the 6th instant, in the Church of the Holy Trinity, Westchester, Pa., by the Rev. John Bolton, Rector, Dr. Anson Parsons, of Erie county, Pa., and Catharine Lacy, daughter of the late Dr. Wm. Darlington, of Westchester, Pa.

ROGERS—GRIFFIN.—In New York, on Tuesday, September 5th, by Rev. James H. Tyng, David L. Rogers, M. D., and Mrs. Mary L. Griffin, of Rye, N. Y.

STYER—YOUNG.—On August 31st, 1865, by Rev. W. H. Conrad, Dr. Albanus Styer, and Miss Hattie C. Young, both of Montgomery Square, Montgomery county, Pa.

TULLER—HALL.—On Wednesday, September 6th, 1865, at the residence of the bride's father, by Rev. Allen Johns, Charles Tuller, M. D., of Wilmington, Del., and Miss Mary J. Hall, eldest daughter of John Hall, Esq., of Chester, Pa.

DIED.

CHILDS.—Dr. Timothy Childs, son of Dr. H. H. Childs, President of the Berkshire (Mass.) Medical College, committed suicide at the Wauregan House, Norwich, on Sunday, Sept. 3d. He was in company with his family, spending the summer at Norwich. Soon after breakfast on Sunday morning he left his family, registered his name at the hotel, and called for a room in which to write a letter, which he did, and addressed it to his wife. He had previously procured a quantity of morphia, took the poison, and was breathing his last when discovered. He is supposed to have been laboring under temporary derangement of mind at the time. Dr. Childs was a native of Pittsfield, Mass. He was for a long time Professor of Anatomy and Surgery in the Berkshire Medical College, and dean of the institution until a few years since, when he removed to New York, to accept the professorship of Anatomy in the Bellevue Hospital Medical College. His reputation in his profession was high, especially in the department of surgery, and few men in Berkshire were more respected for their talents, or beloved for amiable traits of character. Dr. Childs and his wife were on the train which met with the accident, by which several persons were killed, on the Long Island Railroad recently. Mrs. Childs was somewhat injured; but it was not stated that he was hurt. Dr. Childs was about forty-five years old.

HURLEY.—In Washington, D. C., on the 7th inst.,

of dropsy of the heart, William R. Hurley, M. D., of Nashville, Tenn.

STEPHENSON.—Mark Stephenson, M. D., a successful practitioner of over 35 years, in the city of New York, died on Monday, August 28th, aged 62 years. Born in the city of Hudson, Columbia county, he studied medicine in Albany, and was a graduate of the N. Y. College of Physicians and Surgeons. He rose by his own exertion, energy and talents, to an honorable standing in his profession. Feeling the importance of a greater knowledge of the treatment of Ophthalmic diseases, he turned his attention to this branch, in which he was principally distinguished as a surgeon. A consistent Christian, indulgent father, and a firm friend—among the poor and afflicted will his memory ever be cherished.

SWEAT.—Dr. Moses Sweat, a well known medical practitioner of Parsonfield, Maine, died at his residence in that town on Friday, Sept. 1st, aged 77. He has practised his profession in that town for fifty-six years.

ANSWERS TO CORRESPONDENTS.

Dr. J. H. R., Worcester, Pa.—Sent, Althaus' Medical Electricity, and Dr. Druitt's Modern Surgery, on September 4th, by mail.

Dr. L. S., Washington, D. C.—Sent, Turnbull on Ophthalmoscope, by mail, Sept. 4th. Am. Journal of Ophthalmology long since defunct.

Dr. C. H. L., Jackson, Mich.—Gross' Surgery, and Tanner's Manual of Practice, sent by Express, Sept. 5th.

Dr. J. M. C., Wheeling, W. Va.—Sent, Braithwaite's Epitome, by Express, Sept. 5th.

Dr. W. W. B., Polo, Ill.—American Journal of Med. Science, sent through Lea & Blanchard; Durkee on Gonorrhoea, sent by mail, Sept. 5th.

Dr. J. H. G., Philo, O.—Wilde's ear speculum, three in a set, silver plated, costs \$3.50. This is the most satisfactory speculum. It can be sent by mail.

METEOROLOGY.

September	4,	5,	6,	7,	8,	9,	10.
Wind.....	S. W.	S. W.	S.	S. W.	E.	S. E.	S. W.
Weather.....	Cl'dy,	Clear.	Clear.	Clear.	Cl'dy,	Cl'dy,	Clear.
Depth Rain.....	T. & L.				Rain.		
	2 6-10					1 5-10	
Thermometer.							
Minimum.....	69°	68°	70°	65°	67°	62°	61°
At 8 A. M.....	82	76	78	76	73	67	69
At 12 M.....	85	83	85	81	74	69	78
At 3 P. M.....	82	84	86	84	73	69	79
Mean.....	79.50	77.75	79.75	76.80	71.75	66.75	71.75
Barometer.							
At 12 M.....	30.1	30.1	29.9	30.3	30.1	30.2	30.3

Germantown, Pa.

B. J. LEEDON.

WANTED.

Subscribers having any of the following numbers to spare, will confer a favor, and likewise be credited on their running subscriptions, with such as they may return us.

Vols. I, II, III & IV All the numbers.

Vol. V. No. 1, Oct. 6, '60; No. 19, Feb. 9, '61.

" VI. Nos. 19, 10, Aug. 3, 10, '61.

" VII. Nos. 1, 2, 6, Oct. 5, 12, Nov. 2, '61; Nos. 10 to 14, Dec. 7, '61, to March 8, '63.

" VIII. Nos. 17, 18, 19, 22, 23, July 25, Aug. 2, 9, 30, Sept. 6, '62.

" IX. Nos. 6, 7, 8, 18 & 14, 17 & 18, Nov. 8, 15, 22, '62; Dec. 27, '62, and Jan. 8, '63, Jan. 24 & 31, '63.

" XI. Nos. 1, 4, 5, 7, 11, 21, Jan. 2, 23, 30, Feb. 13, March 13, May 21, '64.

" XII. Nos. 1, 6, 11, 12, 17, July 2, Sept. 10, Oct. 22, 29, '64.

Feb. 4, '65.

WE are in pressing need just now of a few copies for new subscribers, of No. 414, Feb. 4, 1865.